

Cypress Creek Sub-Area III follow-up Answers to Community Questions

October 23, 2006

The following Questions were asked in August 2006 at public meetings held at the North Hollywood Community Center. The answers are provided as a written response to these questions submitted by the community. The questions were answered by our government agencies. Together, the Memphis and Shelby County Health Department (MSCHD), Tennessee Department of Environment and Conservation (TDEC), and Tennessee Department of Health (TDH) provide this additional written information on environmental and health issues near Cypress Creek.

If you have more questions or need assistance, please contact:

State of Tennessee Department of Environment & Conservation Division of Solid Waste Management

L&C Tower, 5th Floor
401 Church Street
Nashville TN 37243
615-532-0835
888-891-TDEC (8332)
www.tdec.net/swm

Memphis and Shelby County Health Department Epidemiology

814 Jefferson Avenue
Memphis TN 38105
901-544-7717
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State of Tennessee Department of Health Environmental Epidemiology

1st Floor Cordell Hull Building
425 5th Avenue North
Nashville TN 37247
615-741-7247
800-404-3006
www.tennessee.gov/health

Q: What does the letter I received in the mail mean?

A: In August 2006, the State of Tennessee Department of Health and the Department of Environment and Conservation sent one of two different letters to property owners whose properties had soil tested.

If pesticide concentrations in soil were above a level of concern, then the property owner was notified that the yard needed cleanup. This cleanup would protect people from the pesticide health hazard. If pesticide concentrations were below a level of concern, then the property owner was notified that there was no hazard from the amount of pesticides measured in the yard. Some of the yards may contain small amounts of pesticides and still be safe.

Q: Have there been any specific health conditions attributed to the contamination along the creek?

A: No specific health conditions have been attributed to the contamination. It is possible that somebody could experience health problems due to pesticide exposure, but we do not know if that has happened.

Q: What are the known health effects of these cyclodiene pesticides?

A: The cyclodiene pesticides that are of potential concern near Cypress Creek are aldrin, dieldrin, endrin, and endrin-like pesticides. The health effects and health risks are not clear for current exposures or for past exposures. We know that some people who were exposed to these pesticides at work for a long time, had central nervous system effects. These cyclodiene pesticides block a specific nervous system receptor, called the GABA A receptor. At very high doses of these pesticides, people could have seizures. Recent research suggests that unborn children and infants could have different kinds of effects from the blockage of the GABA A receptor.

In studies, a certain type of mice developed liver cancer from exposure to high levels of aldrin and dieldrin. In addition, test animals sometimes had effects on their kidneys, subtle nervous system effects, toxicity to their fetuses, and decreased reproductive function. These effects have not been observed in studies of people who worked with these chemicals. Aldrin and dieldrin are not believed to cause cancer in humans.

Endrin is also a central nervous system toxin with health effects similar to aldrin and dieldrin. Exposure to moderate amounts can lead to headache, dizziness, nervousness, and confusion. There is no evidence that endrin causes cancer.

The other cyclodiene pesticides were put in a group called endrin-like chemicals. They were considered like endrin in toxicity. Very little is known about them.

For more information about aldrin, dieldrin, or endrin, review this Internet site: <http://www.atsdr.cdc.gov/tfacts89.html>; or call the Tennessee Department of Health at 1-800-404-3006.

Q: What are the health risks from past exposure to these chemicals?

A: The health risk from past exposure to these pesticides would be the same as mentioned above. We do not know for sure what the past conditions or risks were.

Q: How can I find out if my soil was tested and if they found contamination in my yard?

A: Residents may telephone Doug Wright with the Tennessee Department of Environment and Conservation Division of Solid Waste Management at 615-532-0835 or Gary Hermann from Velsicol at 901-380-9995 ext. 120 to find out if their soil has been tested. Every property owner or resident was notified of the testing results. It is likely that if you did not get a notification, your yard was not tested. These test results will let you know if contamination was found in your backyard. All residents with contamination levels that require cleanup will be contacted prior to cleanup.

Q: How do I know that my property is really safe?

A: 129 of the approximately 170 properties near Cypress Creek had soil tested. The soil results for each property were carefully evaluated to determine whether or not a health hazard exists. This evaluation process was protective of public health. Several different groups investigated the soil data. Separately, these groups came to the same conclusions for which properties are safe and which properties need cleanup.

Q: Does the cleanup process guarantee that there will be no more harmful chemicals in the soil?

A: The cleanup process will remove 12 inches of contaminated soil. Where that soil is removed new, clean soil will be put in its place. Then 3 inches of grass sod will be added. After this, the first 15 inches of surface soil will be safe. No harmful chemicals will remain in the surface soil. Underneath this layer, a barrier will indicate where contaminated soil still exists. This can be seen in the photographs on page 4. Any

chemicals remaining below the new materials will have no way to come into contact with people. The soil layers will not mix and the new, clean soil will remain safe.



Photo of the plastic barrier and clean surface soil being placed in a yard.



Photo of grass sod being spread over clean top soil to restore the yard.

Q: If my property was not sampled, how may I get my property sampled?

A: If your property was not previously sampled, please contact Doug Wright with the Tennessee Department of Environment and Conservation (TDEC) Division of Solid Waste Management (DSWM) at 615-532-0835. (Please provide appropriate contact information and property location.)

Since the public meeting, TDEC and TDH have requested that additional properties have soil tested.

Q: How long will the soil removal process take and is the inconvenience being taken into account?

A: The soil removal process is expected to take 1 to 2 weeks depending on the specific conditions at each location and how many hours per day the cleanup takes place. Every attempt will be made to reduce the inconvenience to the property owners and residents. Residents at prospective cleanup locations are encouraged to contact their neighbors, who already had their yards cleaned up, to get first-hand information.

Q: What is done with the soil after it has been removed from properties?

A: The soil will be moved to Velsicol's property where it will be properly managed.

Q: How much clean soil protection will be provided for me and my family?

A: There will be an approximate 1 foot of clean soil placed on the property along with a heavy sod cover measuring about 3 inches in depth for a total depth of 15 inches.

Q: While the soil is being removed (agitated) what effort will be made to minimize additional contamination in the air? What steps are being taken to protect the neighborhood from contaminated dust during the cleanup?

A: Velsicol will continuously monitor the cleanup process to ensure that dust from the cleanup will be minimized under the over-sight of TDEC and the other agencies involved. If a resident is concerned about dust during cleanup actions they should call the Memphis and Shelby County Health Department at 901-544-7717 or the Tennessee Department of Environment and Conservation at 615-532-0835.

Q: Will residents be removed from the area while the cleanup is being done?

A: The cleanup of properties will generally occur during the normal work day, therefore there is little need for the residents to be relocated during the cleanup. However, if the cleanup poses an inconvenience to the resident they need to contact Velsicol and their contractor with their concerns. Residents may appeal to the Tennessee Department of Environment and Conservation if the solution proposed by Velsicol and their contractor is not sufficient.

Q: Have there been any studies that correlate learning disabilities among children and residents along cypress creek?

A: No, at this time, there are no known studies that have been conducted concerning learning disabilities and the residents of Cypress Creek.

Q: Can these cyclodiene pesticides cause me to have neurological problems or problems with my central nervous system?

A: Yes, they can. However, to have symptoms you must have gotten a lot of these pesticides into your body. Some ways you could have done this are: through accidentally eating some of the contaminated dirt, breathing vapors or small contaminated particles, or getting a great deal of the contaminated soil on your skin. We do not know what pesticide levels may cause neurological or central nervous system symptoms.

Q: How can I determine my health risk, if I have been exposed in the past, since the conclusions are based on current levels of contamination?

A: It is not possible to know past exposure. The recent soil samples are our best tool to estimate current risk. These pesticides breakdown very slowly in the environment. Your past risk may have been higher.

Q: Is there a much higher than normal amount of cancer in the community than in the rest of the county?

A: In 2005, the Memphis and Shelby County Health Department conducted a cancer incidence review. The incidence rate of newly diagnosed pancreas cancer in African-American females was higher than the rate in Shelby County for past ten years. Contact Calondra Tibbs with the Memphis and Shelby County Health Department at 901-594-7717 for more information on the cancer incidence report.

The data used in the cancer incidence review was based on people in the area. It was not based on people actually exposed to pesticide contamination. Also, according to the scientific literature these pesticides are unlikely to cause cancer in people.

Q: Where there people used to conduct the health consultation, if so, who were they?

A: The public health consultation is formal process conducted by the State of Tennessee Department of Health and the federal Agency for Toxic Substances and Disease Registry. Environmental Epidemiology from the Department of Health was the author of the consultation. The Health Department performed their own independent evaluation. The report used theoretical risk values based on calculations using both short-term and long-term exposure scenarios. The health consultation used soil data. No human data were used.

Q: Why would testing my yard indicate that soil levels were too low to be cleaned up yet my neighbor's soil was high enough to be cleaned up?

A: When the creek was channeled, no records were kept about where the soils were deposited either on the banks or further down the creek. Contaminated soil was placed in multiple locations. Another reason for the difference in contaminant levels is that the contaminants were not evenly spread throughout the Cypress Creek area.

The only way to know where the pesticides ended up was to sample the soil. The cleanup recommendations followed the measured concentration of pesticides in the soil.

Q: Are there any concerns for families who have actively grown a vegetable garden for over 30 years?

A: We do not think there should be any concerns, but we cannot be sure. Some vegetables were sampled for pesticides. Based on these results, very little pesticide was contained within garden vegetables. Similar results would be expected for vegetables grown in past years. We cannot know for sure what happened in the past.

Q: Do you know exactly when the contamination began and ended?

A: We think it began sometime around 1950 and ended before 1970, but records were not kept at that time.

Q: How much soil will be removed and what criterion was this based on?

A: One foot of soil will be removed and replaced in most areas. An additional three inches of grass sod will cover the new, clean soil. This will provide a sufficient barrier of 15 inches against human exposures to the pesticide contaminated soils.

Q: Will the contamination go through the new soil if my property is cleaned?

A: No, the pesticide contaminated soil tends to be very stable and will not move upward through the new, clean soil.

Q: Water samples are continuously being taken from Velsicol, is this due to continued violations?

A: No, Velsicol does not have continued violations. Rather the water sampling is being done because the Division of Solid Waste Management requires Velsicol to take groundwater samples to determine the effects of efforts to reduce or remove the groundwater contamination plume under the Velsicol facility.

Q: Would this contamination cause my backyard to continuously cave in?

A: No. Although soil collapse has been observed in some backyards along the Creek in the past, this is not a result of the pesticide contamination in the soil.

Q: If I have a basement and water comes in from Cypress Creek, would I need to have the soil in my basement tested?

A: No. The surface water is not contaminated.

Q: Why were properties past the concrete wall of the creek not included in the sampling, there has been constant flooding in this area since the 1970s?

A: The concrete portion of Cypress Creek is included in Sub-Areas I, II, and III. Sub-Area III was selected for more soil testing because it has more residential properties.

Properties downstream of the concrete lined portion of the Creek were sampled in 2001, 2004, and 2005. The portion of Cypress Creek downstream of the concrete wall is referred to as Sub-Areas IV and V. Additional investigation for residences in Sub-Area IV is planned for late 2006.

Q: When can the community expect work to begin on remediation of the floodplain in Sub-Area IV?

A: There are currently no plans to remediate the floodplain in Sub-Area IV, but remediation is possible after the cleanup in Sub-Area III is complete. The remediation of the floodplain has been a lower priority compared to the plans for cleanup of the backyards in the mostly residential Sub-Area III.

Q: Why should the community trust the recommendation made by TDEC?

A: TDEC's mission is to safeguard and protect human health and the environment for all Tennesseans by protecting and improving the quality of our land, air, and water for present and future generations. This cleanup recommendation has been agreed upon by the State of Tennessee Department of Health, Memphis and Shelby County Health Department, and the federal Environmental Protection Agency.

Q: Why was 0.7 mg/kg a valid criterion for initial concern and additional testing but not for property cleanup?

A: 0.7 mg/kg was chosen as a criterion for further sampling in 2003 after the results of that year's soil sampling event had been received by the Division of Solid Waste Management. The property cleanup level was chosen as a result of the risk assessment that was not completed until 2006. The risk assessment recommended a cleanup level of 3 mg/kg.

Q: Is there any concern about contamination in the air?

A: The possibility of air contamination is unknown at this time, so the Division of Solid Waste Management is currently planning to require Velsicol to conduct air sampling in some areas along Cypress Creek.

Q: Will the contaminated soil, over time, affect the drinking water?

A: No, the drinking water source is very deep underground. There is a geological barrier between the deep groundwater and the surface soil. In addition, Municipal drinking water is provided by Memphis Light Gas and Water. MLGW monitors the water for contaminants, and has not had any impact from pesticide contamination.

Q: If I no longer live by the creek, how would I have been notified if the soil levels found on the property pose a health hazard to me and my family?

A: Notification went directly to current property owners. You can contact Doug Wright with the Tennessee Department of Environment and Conservation Division of Solid Waste Management at 615-532-0835 to find out if your past address had soil tested.

Q: Are there plans to repair the concrete liner of Cypress Creek?

A: TDEC is not responsible for the repair of the concrete liner of Cypress Creek. The City of Memphis Public Works/Drain Maintenance oversees this work. The City will make repairs to the liner as necessary. Public Works monitors the condition of drainage structures to facilitate repairs as may be necessary. The City will respond to inquiries made at 901-357-0100 regarding repair requests.

Q: Will there be a health committee formed to address the community health concerns, and if so, will there be members of the community involved?

A: Yes, the local and state Health Departments plan to develop a committee of persons who will contribute ideas to address community health concerns. This committee will consist of community members as well as public health officials.

Q: Has a study been conducted on the health of persons who attended Cypress Middle School and live in University Park?

A: We are not aware of any health studies.

Q: Is there a neurologist on the health department's staff to determine long and short-term neurological affects of these chemicals?

A: Currently, neither the local nor the state Health Department's staff includes a neurologist. However, plans to address community health concerns include involving a neurologist or others with expertise in this area.

Q: What is the current level of contamination at Cypress Middle School and at University Park?

A: In December 2003, Cypress Middle School and University Park were capped with a 1-foot clean soil barrier. Soil sampling was not conducted after this date because the soil barrier prevents human exposures in the area.

Q: The consultation began in spring 2005 and an internal report of findings was completed in the fall of 2005. The Vollintine-Evergreen Community Association is aware of the fact that the initial, internal report was considered problematic and its authors were required to edit it extensively. What was considered problematic about the original report and how do the conclusions presented differ from those contained in the original report?

A: There was no internal report. A complex environmental public health investigation, such as this one for Cypress Creek Sub-Area III, goes through several drafts before becoming a formal, printed report. Environmental Epidemiology of the Tennessee Department of Health was the sole author of the Health Consultation. It was prepared independently by their competent staff without interference. The report was further certified for accuracy by the federal government prior to being presented.

At the time the consultation was being written, there was general disagreement between various agencies on how to proceed with a health protective cleanup. During the writing of the consultation, the improved communication helped the various agencies come to agreement about cleanup levels that are protective of human health.

Q: What is Velsicol doing for our community?

A: The state and local Health Departments do not have information on the activities that Velsicol participates in for this community. Check the Internet site www.cypresscreekmemphis.com for more information on Velsicol's Cypress Creek environmental project; or call Velsicol at 901-380-9995 ext. 120.

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Velsicol Permit Modification Public Meeting Questions

(Community questions asked to Velsicol that needed government responses.)

Q: Why could you find bad soil down the street from me, but my yard is OK?

A: Nobody knows exactly where the contaminated creek sediments were moved to when the concrete channel was made. Nobody knows how the sediments were used to fill in low areas or spread to even out other areas. The only way to know where the pesticides ended up was to sample the soil. The soil testing was done in order to locate the bad soil.

Q: Can the Memphis and Shelby County or State Health Department have another meeting to get more questions answered?

A: Yes, there will be more meetings. As the committee investigating the health issues around Cypress Creek progresses with their work, they will have additional interaction with community members. People with historical stories to share or needing more information are encouraged to contact one of our agencies for assistance.

Q: Our property is just two houses away from the point on Bingham Street that is marked for cleanup. Water runs from the Bingham property that tested high into my backyard. I am not satisfied and would like to personally see test results.

A: Please contact Doug Wright with the Tennessee Department of Environment and Conservation (TDEC) Division of Solid Waste Management (DSWM) at 615-532-0835. Providing appropriate contact information and property address will allow Doug to best assist you. Most government work related to the Cypress Creek site is considered public and can be shared with you. We can also help to explain complex portions of the data in more simple terms.

Q: Does this chemical have something to do with the deaths last year in the 38108 zip code? For some reason, this community death rate for kids is higher than for all over Shelby County.

A: We do not know for sure. This is something that the Memphis and Shelby County Health Department and the State of Tennessee Department of Health would like to look into more closely with help from the committee formed to look at health issues.

Q: This area needs to be cleaned up, cleared of all brush, trees, bushes, and chemicals that are not good for your health. These products from the creek will cause cancer and other diseases.

A: Our agencies agree that some cleanup of chemicals is necessary. We would agree that other debris and litter should be cleaned up as a quality of life improvement. Our scientific literature review did not show that these pesticides cause cancer.

Q: Was the land where Cypress School was built tested before it was built? We bought a house ½ mile south of the school and our daughter attended the school. My wife and daughter have since passed away.

A: We are truly sorry for your losses. We are not aware of any soil testing before the school building was built. The Cypress Creek Middle School area was tested in the past and a protective cap was put in place as a barrier to eliminate exposure. The cap works to prevent contact with any potentially harmful chemicals.

Q: The creek overflowed up to my back door. It needs to be cleaned up and fenced in such that my child will not fall in and get hurt. The creek is a risk, without a safety zone, for all children in the neighborhood. There were lots of rashes, infections, and colds from ingesting the hazardous chemicals.

A: It would be possible for highly contaminated soils to contact the skin and then lead to a rash. Chemicals are not contagious and do not lead to colds and infections like bacteria or viruses.

The City of Memphis has stated that they are committed to maintain a storm water drainage system that will prevent residential flooding. Residents should report localized flooding episodes to Public Works/Drain Maintenance, at 901-357-0100, for review and/or response. Residents that desire to restrict access to the drainage structure should place any fencing on private property.

Q: Some of the Vollintine-Evergreen Community Association (VECA) would like to know whether Velsicol is willing to support and pay for blood tests of residents living in Sub-Area III, to establish the level of chemicals such as dieldrin in their systems?

A: Blood testing may be a useful tool and is being planned. Our government agencies will ask Velsicol to financially support such testing.

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